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# CONSERVATION UPDATE

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November 1996

State Energy Programs

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## Arizona

### 1996 Energy Management Conference

The 1996 Energy Management Conference (EMC) will be December 4-6 at the Mesa Community Center in Mesa, Arizona. Each year, the EMC provides a forum for hundreds of energy professionals to learn more about technologies that help their organizations and institutions save energy and reduce utility costs. The conference concludes with the presentation of the Annual Energy Conscious Community Awards that recognize communities and school districts throughout Arizona for their energy-saving techniques.

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## Hawaii

### Solar ovens in classrooms

The charms and benefits of using simple solar ovens as classroom tools were demonstrated during workshops at Teacher Institute Day in Hilo, Hawaii, in October. The state's teachers' union developed Teacher Institute Days for professional training and improvement.

The simplest solar ovens can be made from shoeboxes, aluminum foil, overhead transparencies, and other readily available materials. Even elementary school students can successfully build their own ovens, which can reach 200°F on a sunny day—warm enough to make 'smores, nachos, or other snacks. Experimenting with solar ovens gives youngsters an opportunity to learn observation skills, data collection, and scientific method. The project also offers extensions in math (e.g., graphing) and social sciences (e.g., deforestation and the plight of African refugees). Solar ovens are a good low-temperature heat source. They can be used to pasteurize pond water in a biology unit (use a microscope to observe the organisms in heated water and in a control sample), and have uses in many other classroom activities.

A "Shoebox Solar Cooker" curriculum module was developed by the Hawaii Energy Extension Service with help from district public school teachers. The curriculum was derived from an activity of the Florida Middle School Energy Education Project. The Hawaii Energy Extension Service is a program of the State of Hawaii Department of Business, Economic Development, and Tourism.

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## Iowa

### Iowa E-85 fueling infrastructure progress

Iowa recently celebrated the grand opening of an E-85 refueling site at the Bach Oil Fill and Food in Council Bluffs. This event follows a successful E-85 grand opening with Governor Terry Branstad at the Texaco Truck Stop at Highway 34 and 406 in West Burlington in early October. Additional E-85 tank grand opening ceremonies are scheduled for Ames and West Des Moines in early December. E-85 (85 percent ethanol and 15 percent unleaded gasoline) fueling sites are being established as part of Iowa's E-85 Marketing Program, which is a partnership between the Iowa Corn Promotion Board, Iowa Department of Agriculture and Land Stewardship, and the Iowa Department of Natural Resources. The goal of the program is to provide a fueling infrastructure so that private and public fleet owners will be encouraged to invest in E-85 automobiles. Progress toward this goal is occurring. Efforts in 1997 will focus on E-85 vehicle marketing in the communities with public E-85 fueling capability and expanding the number of Iowa communities offering E-85 fuel.

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## Kansas

### Researcher adds sugar to diesel fuel

A recipe for an alternative diesel fuel using agricultural resources found in Kansas begins with a liberal dose of something not normally used in engine fuels—sugar.

The primary goal of a University of Kansas (KU) researcher is to demonstrate technology that can convert grass, stalks, trash, farm byproducts, surplus grains, and corn stover-corn stalks without ears—into sugar for use as the primary component in fuel for diesel engines.

Galen Suppes, assistant professor of chemical and petroleum engineering, reported that KU researchers have already made these fuels run in conventional diesel engines. Tests have been so successful that a provisional patent application has been filed with the U.S. Patent Office on fuel mixtures, with a final patent application expected to be filed soon.

Research shows that a diesel fuel composed of nearly 15 percent water, 20 percent to 30 percent methanol or ethanol, and 50 percent to 75 percent syrup-water and sugar—is an attractive recipe for the fuel.

Funding for cetane-improver research into conventional diesel fuel comes from the Kansas Soybean Commission, the KU Energy Research Center, and the Kansas Value Added Center.

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## **Kentucky**

### **New editor and fax number**

*Conservation Update* has a new editor, Karen W. Landry. You can reach her by phone at (502) 564-7192. We also have a new facsimile number, (502) 564-9207.

### **UPS to convert 50 delivery trucks to CNG**

USDOE funds of \$230,000 will enable the United Parcel Service (UPS) to convert 50 delivery trucks to dedicated CNG (compressed natural gas) use at their transport center at the Louisville International Airport. The funds area special project within Kentucky's State Energy Program. The matching investment from UPS will be at least \$118,000. UPS will collect data on fuel use and maintenance requirements and send it to USDOE's Alternative Fuels Data Center. The Kentucky Clean Fuels Coalition, a nonprofit organization, will receive \$10,000 from the grant to promote alternative fuel vehicles to other companies that operate fleets in the Louisville/Jefferson County area.

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## **Louisiana**

### **Energy savings through reduced tillage**

The cotton tillage program demonstrates that tillage can be reduced and still provide good seedbeds, weed control, and high yields. Reducing tillage in the agricultural process lessens fuel consumption, greenhouse emissions, soil erosion, and fertilizer and pesticide runoff. This reduced runoff will decrease the amount of toxicants in lakes and streams, improve fish and wildlife habitat, and decrease the need to add fertilizers continuously.

To date, this program is saving the participating farmers 3.07 gallons of fuel per acre, \$13.51 per acre, and .23 hours of work time per acre. Currently, there are seven parishes with demonstration sites with a combined area of 272 acres. With this average, we can expect savings of \$3,682 .83, 836.9 gallons of fuel, and 63 hours of work time.

This program has been so successful in the local farming community that many farmers plan to adopt such practices in the next season. This project is administered by the Louisiana Department of Natural Resources' Energy Section, in conjunction with Louisiana State University Agricultural

Center, and is funded with Petroleum Violation Escrow funds with some matching funds from LSU.

### **Resource and Information Center**

The Louisiana Energy and Environmental Resource and Information Center (LEERIC) provides a statewide resource center and database for all Department of Natural Resource information-energy projects, coastal restoration programs, oil and gas data; Department of Environmental Quality information-permits, regulations, legislation; and other related agencies. All of this information is compiled for the public to access.

LEERIC offers a one-stop energy and environmental hotline service; teaching resources (lesson plans, videotapes, computer software, curriculum guides); workshops and conferences; business materials; specification guides to energy-efficient buildings; nationwide research links; energy and environmental databases; and many other resources that are all free to the public.

This program has allowed Louisiana citizens to access thousands of volumes of information on energy and the environment at one central location. Located on the LSU campus, this library has been a valuable tool for students, teachers, researchers, and other interested people. LEERIC is funded by the Louisiana Department of Natural Resources' Energy Section with some matching funds from LSU.

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## **Massachusetts**

### **Alternative energy site for Rockport**

The Massachusetts Division of Energy Resources (DOER) and the Department of Environmental Management (DEM) today announced plans for construction of a Renewable Energy Visitors Center at Halibut Point State Park in Rockport, Massachusetts. Slated for completion in late November, the site will offer hands-on and instructional opportunities for individuals interested in alternative sources of energy.

The first facility of its kind in the country, the Renewable Energy Visitors Center will feature a wind-powered turbine, a solar photovoltaic array, and a solar hot water system. The electricity generated by these renewable sources will be used to power the facility's lighting, heating, cooling, and hot water. Surplus electricity will be sold to Massachusetts Electric Company, which is providing technical assistance on the project and maintenance for the completed systems.

Bergey Windpower of Norman, Oklahoma, is the manufacturer of the wind turbine. Designed to be visually attractive, the 10-kilowatt wind turbine will sit atop a 100-foot tower which provides no danger or perching opportunities for area wildlife.

The center will have interpretive signs, displays, and systems monitoring exhibits which will serve as learning aids

for visitors. Future plans include sharing this information electronically through a specially designed Internet site.

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## **Mississippi**

### **Master Lease program**

The Mississippi Department of Economic and Community Development-Energy Division's technical and financial resources staff worked with administration and engineers for the West Tallahatchie County School District to help them install and fund an efficient heating and cooling system for the district's high school. The new system replaces an inefficient, unreliable hot water heating system that had become a daily threat to holding classes in that building. The \$185,908 project, funded through the Division's Master Lease program, is expected to generate annual energy savings of \$10,500, a 70% reduction in the district's heating costs. Additionally, the classroom learning environment has been significantly improved.

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### **Mississippi lignite mine project**

The Mississippi Department of Economic and Community Development-Energy Division has been instrumental in the development of a lignite mine in Choctaw County, Mississippi. The \$500 million lignite power plant and mine is a public-private partnership between TVA and two Texas-based companies. Phillips Coals Co. will supply fuel to a 400-megawatt power plant operated by CRSS Inc. The construction phase of the mine and power plant is expected to begin in 1998.

The mine/power plant is the center of development for an eco-industrial park. An eco-industrial park, in theory, combines energy production, manufacturing, and service industries in one location to promote efficient use of available energy resources-i. e., waste from one industry could be utilized as an energy resource for another, creating an environmentally responsible and economical approach to industrial growth.

This eco-industrial park will be the first of its type in the United States.

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## **North Carolina**

### **State energy office plays critical role during Hurricane Fran recovery efforts**

The North Carolina Energy Division emergency preparedness team, after days of tracking Hurricane Fran's approach to North Carolina, was fully operational in the state's Emergency Center hours before the storm washed ashore the

night of September 5. As the state's most powerful and destructive storm on record tore its ways through 50 counties, the emergency team (division director Carson D. Culbreth, Deborah Lamm, and Joy Williams) began the difficult task of helping to restore power and fuel supplies to areas affected by the storm.

The storm eventually left 1.8 million residents without power. To restore power, the Energy Division emergency team worked 24 hours a day for the next five days. Team members coordinated recovery efforts among the three major utility companies, 28 cooperatives, and 62 ElectricCities in the state to restore power to affected areas. Within eight days, power was restored to 98.9 percent of the people. Team members also worked with the propane, petroleum, and natural gas industries to coordinate their hurricane response efforts. Together with the National Guard, Highway Patrol, Division of Motor Vehicles, and other state agencies, the Energy Division helped clear the way for 8,500 utility field employees from out of state to join North Carolina work crews to bring full power back to residents.

The information obtained by the Energy Division helped the Governor's Office and state officials setup shelters and marshall the equipment needed to clear the roadways for utility company crews. The Energy Division emergency team also met with Federal Emergency Management Agency (FEMA) officials to help them assess the damage inflicted by Hurricane Fran. Energy Division reports were used by the Red Cross and state food banks to determine where the power outages were and where the areas of greatest need existed. Relief efforts by the Red Cross and the food banks in large part were determined by the power outage reports compiled by the Energy Division.

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## **Oregon**

### **Governor Kitzhaber proclaims October Energy Awareness Month**

Governor John A. Kitzhaber has proclaimed October as Energy Awareness Month in Oregon. The major energy suppliers and energy offices in Oregon have joined forces to promote energy efficiency and awareness.

The Office of Energy has teamed with the Oregon Oil Heat Commission, Northwest Natural Gas, Portland General Electric, Pacific Power, the City of Portland Energy Office, and U.S. Bancorp to promote energy awareness during October. This year's theme is "Home Energy: What's Hot! What's Cool!"

Among the group's accomplishments are:

- a public service announcement promoting home energy efficiency that airs through the end of the year on KGW-TV,
- home energy tips in the Homes section of the October 6 edition of *The Sunday Oregonian*;

- ♦ press packets on home weatherization, energy-saving appliances, and energy-efficient new homes to newspapers, radio, and television stations statewide;
- energy information on grocery bags at Nature's and Safeway markets; and
- ♦ a special program with Portland Public Schools to promote energy efficiency.

As of year-end 1995, the Office's programs had saved enough electricity to eliminate the need to build a new power plant and enough natural gas, oil, and other fuels to heat 300,000 homes for one year. In addition, those energy savings cut the energy costs for Oregon businesses, households, and public agencies by more than \$200 million a year.

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**CONSERVATION UPDATE** is a free monthly publication prepared by the Kentucky Natural Resources and Environment Protection Cabinet Division of Energy, to facilitate the transfer of current state energy program (SEP) and technical information among the states and territories. Please submit short articles that describe successful programs, solicit ideas, share reports, studies or evaluations, announce new publications, personnel changes, office address changes, conferences, seminars and workshops. Submittals are due by the seventh of each month. Please send submittals, address corrections, or name changes to: **CONSERVATION UPDATE**, Kentucky Natural Resources and Environmental Protection Cabinet Division of Energy, 663 Teton Trail, Frankfort Kentucky 40601, phone (502) 564-7192, facsimile (502) 564-9207. Past issues are available upon request. For more information, contact Karen W. Landry, Editor, or John M. Stapleton, Director.

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